

Interactivity in Goodsalls' Rule and Fistula-in-ano

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ABSTRACT

Fistula-in-ano is a tract lined by granulation tissue which opens deeply in the anal canal or rectum and superficially on the skin around the anus. Managing fistula-in-ano is a challenging task. Because recognizing the internal opening and cause of the fistula tract is difficult. Both external and internal openings of the fistula tract are essential for the complete identification of the tract. The purpose of the present study was to study the relevance between Goodsall's rule and course of the fistula tract. A sample of 106 patients with simple fistula was studied. In this study Hydrogen Peroxide was injected by using syringe through the external opening of the fistula and seen the appearance of air bubbles which are come out from the internal opening. The site and number of internal and external openings and the course of the tract were recorded. The median age of the participants was 37 years. The majority were male (57.54%). Thirty one point one percent (31.1%) showed intersphincteric fistula, 51.8% showed transphincteric fistula and 16.9% had superficial fistula. The overall predictive accuracy of Goodsall's rule in studied group was 68.3%. It is significantly associated with the type of fistula. The high predictive accuracy in superficial fistula (94.4%), intersphincteric fistula (84.4%) and transphincteric fistula (69.09%) were observed. It was concluded that, Goodsall's rule was not accurate in 31.7% of all fistulae; it can be used as a guide in locating the course of the tract and the internal opening.

KEYWORDS: Goodsalls' rule, fistula-in-ano, Sri Lankan population

INTRODUCTION

Fistula-in-ano is a tract lined by granulation tissue which opens deeply in the anal canal or rectum and superficially on the skin around the anus (Cirocco et al., 1991). At present, several treatment modalities are being used by allopathic medicine to manage the fistula-in-ano. Managing fistula-in-ano is a challenging task. Because recognizing the internal opening and cause of the fistula tract is difficult. Both external and internal openings of the fistula tract are essential for the complete identification of the tract. David Henry Goodsall described a rule to explain the location of the fistula tract. Both external and internal openings of the fistula tract are essential for the complete identification of the tract.

David Henry Goodsall states that if external opening is situated in the posterior to the transverse anal line, at that time tract will open in to the midline posteriorly and if the external opening situated anterior to the transvers anal line at that time it usually associated with a radial tract (Ross et al., 1988). The purpose of the present study was to study the correlation between Goodsall's rule and course of the fistula tract.

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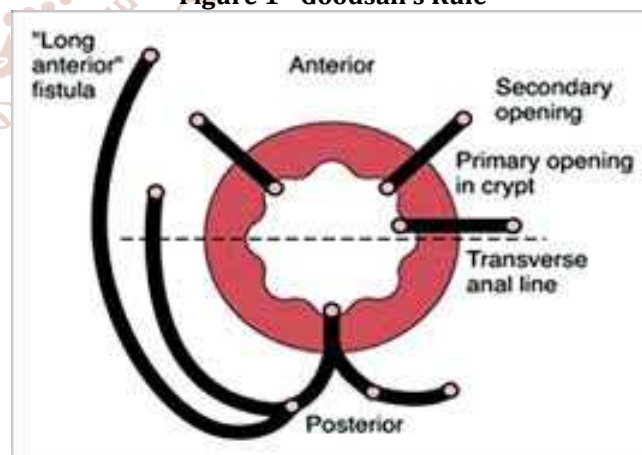
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Figure 1 - Goodsall's Rule



Methodology:

Patients those who had simple fistula-in-ano were included in the study. Those who had following complex fistula were not considered for this study.

- Multiple fistula
- Horseshoe fistula
- tract length >10cm
- severe suppurative fistula
- Fistula with secondary causes; such as trauma, TB, carcinoma, Crohn's disease were excluded from the study.

After taking history, digital per rectal examination and proctoscopy were carried out in all patients. All patients were assessed in the lithotomy or left lateral position depending on the case. Hydrogen Peroxide was injected by using syringe through the external opening of the fistula and seen the appearance of air bubbles which are come out from the internal opening. The site and number of internal and external openings and the course of the tract were recorded. Data were analyzed by using SPSS.

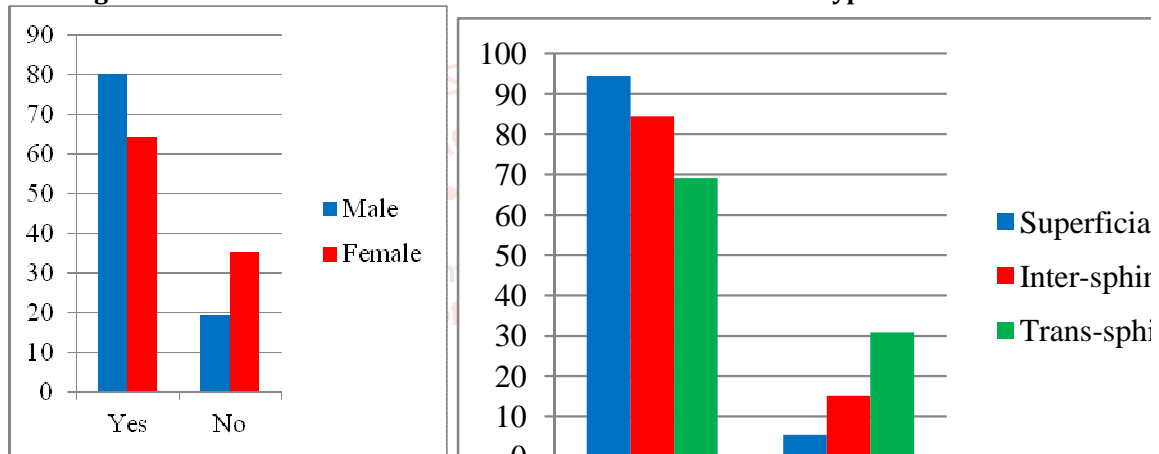
Results:

The median age of the participants was 37 years. (Range 18-75). The majority of the patients were males (57.54%). Thirty one point one percent (31.1%) had intersphincteric fistula, 51.8% had transphincteric fistula and 16.9% had superficial fistula. The overall predictive accuracy of Goodsall's rule in patients was 68.3%. Goodsall's rule was not related to gender and it was significantly associated with the type of fistula. (P value should be given as it is significant)

Table 1 - Correlation between course of fistula tract and Goodsall's rule

Correlation between course of fistula tract and Goodsall's rule P value		
	Yes (%)	No (%)
Sex	Male 49 (80.32)	12 (19.6)
	Female 29 (64.4)	16 (35.5)
Type	Superficial 17 (94.4)	01(5.5)
	Inter-sphincteric 28 (84.4)	05 (15.1)
	Trans-sphincteric 38 (69.09)	17 (30.9)

Figure 2 - Relation between Goodsall's Rule with Gender and Type of Fistula-in-ano



Discussion:

According to the analysis, the predictive accuracy for simple fistula was 78.3%. Fistula with an anterior external opening had a predictive accuracy of 76.3% and posterior external opening had a predictive accuracy of 79.4%. The difference was not statistically significant. Goodsall's rule was able to predict the internal opening in 97.1% of superficial fistula, 84.1% of inter-sphincteric fistula and 69.3% of trans-sphincteric. The difference was statistically significant. (p=0.001).

Conclusion:

It was concluded that, Goodsall's rule was not accurate in 31.7% of all fistula. It can be used as a guide in locating the course of the tract and the internal opening.

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